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CONCLUSIONS: The prevalence of AF in selected countries was forecasted to grow substantially in both developing and developed countries. As the world's population ages and health care becomes more accessible, the economic burden of AF will continue to rise as well.

PMD17

CLINICAL AND ECONOMIC OUTCOMES DERIVED FROM THE USE OF A CHLORHEXIDINE – IMPREGNATED SPONGE (BIOPATCH®) FOR THE PREVENTION OF CATHER-RELATED BLOODSTREAM INFECTIONS IN INTENSIVE CARE UNITS IN MEXICO

Zanela OO, Cabra HA, Rodriguez S, Junqueira SM
Johnson & Johnson Medical, Mexico City, D.F., Mexico

OBJECTIVES: Estimate the expected number of catheter-related bloodstream infections (CRBSIs) and the associated costs derived from the adoption of a chlorhexidine-impregnated sponge (Biopatch®) plus central venous catheter (CVC) traditional standard of care strategy in intensive care units (ICUs) versus CVC traditional standard of care (no sponge) from a Mexican public hospital perspective. **METHODS:** A decision tree was developed to estimate the clinical and economic consequences of adding Biopatch® to CVC traditional standard of care in adult population. ICUs' annual catheter-days were estimated using local average occupancy, number of placed catheters and length of stay published statistics. The effectiveness variable was the CRBSI rate / 1000 catheter days, obtained from published literature and used to estimate annual CRBSIs. It was assumed that once a patient developed a CRBSI, he incurred in additional length of stay and received the correspondent pharmacologic treatment; only one infection per patient was allowed. Cost data were obtained from published literature and the public institution's price data base; the cost for Biopatch® was internally assessed. The considered time horizon was one year, thus no annual discount rate was used. Costs were inflation-adjusted and expressed in 2011 Mexican pesos. Bivariate sensitivity analyses were performed to assess uncertainty. **RESULTS:** The addition of Biopatch® to CVC traditional standard of care in ICUs resulted in a 70% reduction of expected annual CRBSIs and 0.8% less total costs when compared to the traditional standard of care alone, thus representing a cost-saving alternative. Results were robust to ±25% variations in the price of the sponge, ICU occupancy and CRBSI rates, even in the extreme scenarios. **CONCLUSIONS:** The adoption of a Biopatch® plus CVC traditional standard of care strategy in adult population at ICUs results in significant clinical and economic benefits for the hospital, as it reduces CRBSI incidence and resource utilization.

PMD18

BYPASS THERAPY ASSAY TESTING AS A STRATEGY TO REDUCE TREATMENT COSTS FOR HEMOPHILIA PATIENTS WITH INHIBITORS

Chaugule S[1], Hay J[1], Young G[2]
[1]*University of Southern California, Los Angeles, CA, USA,* [2]*Keck School of Medicine, USC, Los Angeles, CA, USA*

OBJECTIVES: Published studies suggest that bypass therapy assay testing can be used to effectively predict treatment response and dosing requirements for an individual hemophilia patient with inhibitors. This study aims to evaluate the costs and treatment outcomes of bypass therapy assay testing versus no testing strategy on different treatments for mild to moderate bleeding hemophilia patient with inhibitors. This study also investigates the cost implications if testing assays could predict the optimum dose for new type of therapies like concomitant therapy. **METHODS:** A decision tree simulation model was used to simulate inhibitor treatment costs and outcomes from a US third party payer perspective. All estimates of costs were obtained from the literature or expert opinion and were adjusted to 2011 US dollars. Based on a previous published model, the efficacy of APCC and rFVIIa were assumed to be the same in the no testing scenario while assay testing was assumed to improve the efficacy of both the products by 10%. Probabilistic sensitivity analysis was used to determine the robustness of the model's results. The model was developed using Microsoft Excel and @Risk. **RESULTS:** If bypass therapy assay testing successfully predicts the treatment response and improves treatment efficacy by just 10%, cost savings of $6939 for APCC and $7699 for rFVIIa treatment were observed per bleeding episode. Further, if testing successfully predicts the optimum dose for concomitant therapy on the onset of bleeding, significant cost savings were observed when compared to rFVIIa and APCC therapies alone. The results were sensitive to frequency of dosing, efficacy, rebleed rate and drug price. **CONCLUSIONS:** Bypass therapy assay testing is recommended for reducing costs while optimizing treatment response and dose before administering treatment in hemophilia patients with inhibitors.

PMD19

MULTIPLE DAILY INJECTION THERAPY (MDI) VERSUS DURABLE INSULIN PUMP THERAPY IN TYPE II DIABETICS: A BREAKEVEN ANALYSIS

David G[1], Shafiroff J[2], Saulnier A[3], Gunnarsson C[3]
[1]*University of Pennsylvania and National Bureau of Economic Research, Philadelphia, PA, USA,* [2]*Medtronic, Inc., Northridge, CA, USA,* [3]*S2 Statistical Solutions, Inc., Cincinnati, OH, USA*

OBJECTIVES: To compare cost of care among Type II diabetic patients using an insulin pump delivery system versus alternate methods of insulin delivery (focus on multiple daily injectors [MDIs]) using administrative claims data. **METHODS:** This study used 2009 MarketScan® Research Database data. Patients were included if they were continuously enrolled throughout 2009 and were classified as Type II diabetic based on a combination of diagnosis codes and medication claims with the final application of age where diagnosis was indeterminate. Patients were then classified as MDIs and insulin pump users based on HCPCS codes and the use of rapid or short acting insulin prescriptions. Treatment costs were the focus and included pumps, pump supplies, insulin, and drugs. Costs of complications and hospitalizations were not included. The study utilized a breakeven analysis to capture both the fixed and variable costs associated with insulin pumps versus injection across different cost percentiles of insulin and other drugs. **RESULTS:** A total of 68,636 Type II diabetics met inclusion criteria, of which 84% (57,418) were MDIs, and 16% (11,218) used insulin pumps. Durable insulin pumps required an upfront investment of approximately $4200 with additional pump supply costs. Insulin pump users, however, required less insulin and other drugs compared with MDI patients, resulting in less associated costs. Insulin pumps last approximately four years, and their value proposition increases with the level of insulin use required. Breakeven analysis revealed patients at the top 10th percentile of expenditures for insulin and other drugs generated savings through lower use of insulin, which offset the insulin pump cost in <3 years (1,071 days). **CONCLUSIONS:** Although durable insulin pumps have an upfront cost, they are better able to control insulin delivery. The reduced drug-related expenditures offset initial pump investment within three years for the most costly cohort of insulin users.

PMD20

ESTIMATED COST SAVING FOR ARTHROSCOPIC SUBACROMIAL DECOMPRESSION

Martini N, Bhattacharyya SK
DePuy Mitek, Inc., Raynham, MA, USA

OBJECTIVES: To estimate and compare the cost of arthroscopic subacromial decompression (SAD) using VAPR® VUE™ Radiofrequency System with COOLPULSE® 90 Electrode (COOLPULSE) and the ArthroCare® Quantum™ System with Super TurboVac® electrode (Super TurboVac). **METHODS:** An in-vitro study of 72 bovine tendon specimens was used with COOLPULSE 90 and Super TurboVac. These devices were operated at their default ablation settings (220 and 270 Watts for COOLPULSE and TurboVac, respectively) for multiple trials. The tissue removal rate was determined by measuring the tissue mass before and after ablation. The measure was repeated and averages were calculated. Average length of time needed for tissue removal in SAD procedures and data on the unit cost of operation room (OR) time were obtained from clinical model for arthroscopic procedure and published literature. 2011 IMS data were used to calculate the average selling price for COOLPULSE and Super TurboVac. **RESULTS:** The in-vitro study showed the average ablation rates for COOLPULSE (no clogs were found with COOLPULSE) and Super TurboVac (excluding data from clogged runs for Super TurboVac) were 1.12+0.22 gram/minute and 0.93+0.21 gram/minute, respectively ($p < 0.001$). Average time for SAD from literature and clinical modeling was 13 minutes and the estimated cost of OR time in the US was $20/minute. The average costs of ablation using COOLPULSE and Super TurboVac were estimated to be $436 and $480, respectively. **CONCLUSIONS:** Tissue removal rate in arthroscopic procedures is important for surgical efficiency, for procedure duration that directly benefits patients, and for cost. The in-vitro study demonstrated that COOLPULSE achieved significantly higher tissue removal rates compared to Super TurboVac which may result in cost savings to a surgery facility.

PMD21

INDUSTRIAL-GRADE SILICONE IN BREAST IMPLANTS: EVALUATING COST IMPLICATIONS OF DIFFERENT EXPLANTATION STRATEGIES

Montouchet C[1], Hart P[2]
[1]*Medaxial Group, London, UK,* [2]*Medaxial Group, London, London, UK*

OBJECTIVES: In December 2011, French health authorities agreed to reimburse the explantation of defective Poly Implant Prothèse (PIP) breast implants, triggering responses from other national policy makers. Spurred by public concern and media coverage, the UK health secretary announced that the National Healthcare Service (NHS) would remove and replace the defective devices it had installed. Using the UK as a case study, we evaluated three PIP-related policy scenarios that have been instituted internationally. A cost comparision model was developed to assess the cost implications of different explantation scenarios and to identify key cost drivers from the perspective of the NHS. **METHODS:** The model explored the following scenarios: (a) immediate removal of all PIP breast implants; (b) targeted removal of ruptured implants; (c) symptom surveillance, with no extraordinary removal of implants. Complication (e.g. rupture, silicone leakage) rates were taken from the medical literature. Event management and screening costs were drawn from NHS Reference Costs (2009-2010). Sensitivity analyses were conducted using a range of costs, complication rates and patient numbers. **RESULTS:** Regardless of observed rupture rates, reimbursing all explantations was the costliest option, followed by screening and targeted removal of ruptured implants. Given the apparently low rate of complications, the least costly option was a policy of symptom surveillance, where explantation stemmed from presentation of rupture-related symptoms. **CONCLUSIONS:** The dearth of implant-related complication data makes analysis of the current crisis challenging. Until reliable data about the clinical implications of the faulty implants are gathered, policy makers will struggle to accurately assess the relative budget impact of their recommendations. Even then, heterogeneity among the devices exported to different countries may confound predictions. More broadly, the lack of complication data highlighted by this study indicates a need for improved regulation and monitoring of medical devices to ensure future policy decisions are better informed.

PMD22

COMPARATIVE COST BETWEEN VERTEBROPLASTY AND KYPHOPLASTY FOR THE TREATMENT OF VERTEBRAL COMPRESSION FRACTURES

Ong KL[1], Lau E[2], Kemner JE[3], Kurtz SM[1]
[1]*Exponent, Inc., Philadelphia, PA, USA,* [2]*Exponent, Inc., Menlo Park, CA, USA,* [3]*Medtronic Spinal and Biologics, Memphis, TN, USA*